



Cornell University

EX PARTE OR LATE FILED

School of Electrical Engineering

Phillips Hall
Ithaca, NY 14853-5401
FAX: 607-254-4565

May 26, 1994
Richard C. Compton
Millimeter and
Microwave Laboratory
(607) 255-9231
(607) 255-2792 FAX
rcc7@cornell.edu

Office of the Secretary
CC Docket No. 92-297
Federal Communications Commission
Washington, DC 20554

DOCKET FILE COPY ORIGINAL

To The Secretary:

I hereby request permission to serve as a member of the Advisory Committee established to negotiate regulations defining the technical rules appropriate to sharing the 27.5 - 29.5 GHz band. As an academic, a consultant, and a developer of new products that would operate at these frequencies, I represent interests that will be significantly affected by the outcome of these rules – interests not adequately represented by entities listed in paragraph 8 of CC Docket No. 92-297.

To highlight the most important qualifications I would bring to the Committee:

- Educator and academic, with research and teaching interests in Millimeter-wave/Microwave Quasi-Optical Arrays and Millimeter-wave/Microwave Integrated Circuits
- Consultant to industry on areas of research
- CEO of Avoca Laboratories, Inc., a minority-owned business conducting research and development of products that will operate in the 27.5 - 29.5 GHz range

The enclosed curriculum vitae and list of publications present my credentials in more detail.

If allowed to serve on the Committee, I will actively participate in good faith in the development of the rules under consideration.

No. of Copies rec'd _____
List ABCDE

Quigley

Thank you for considering this request. I look forward to hearing from you soon.

Respectfully submitted,

Richard Compton

Richard C. Compton
Assistant Professor

encl.

cc: Susan Magnotti

Curriculum Vitae — May 1994

Richard C. Compton

Assistant Professor in Electrical Engineering
Cornell University

RECEIVED
MAY 27 1994
FOR [illegible]

Education

Ph.D. in Electrical Engineering, California Institute of Technology, 1987
Thesis: Analysis of Millimeter and Microwave Integrated Circuits

B.Sc. (Hons) Physics, University of Sydney, 1983

Research Topics

Millimeter-wave/Microwave Integrated Circuits

Background

Richard Compton completed his B.Sc. at the University of Sydney in 1982. Before starting his PhD he developed, fabricated and tested components for submillimeter-wave lasers for the Commonwealth Scientific and Industrial Organization. During his PhD, at the California Institute of Technology (1983-1987), he worked as a Fulbright scholar on several projects, including the design, fabrication, and measurement of millimeter and microwave antennas and arrays. At Cornell University he has established a group in the areas of RF integrated circuits, and novel techniques for fabricating and measuring these circuits. His group at Cornell has done pioneering work in the area of high frequency wireless communications. Richard is a National Science Foundation Presidential Young Investigator. In 1993 he was elected a member of URSI Commission D and elected to the IEEE AP-S ADCOM.

Industry Experience

1982-1983 **Technical Officer, Commonwealth Scientific and Indust. Res. Org.**

Developed, fabricated and tested components for millimeter-wave lasers.

Consulting

Hughes Aircraft, Electro-Optical Division.

Designed and fabricated submillimeter/infrared filters.

TRW, Electronics and Defense Sector.

Planar antenna design and testing for low-noise noise receiver system.

Circuit modelling for ultra-high speed computer bus.

Siemens, Research and Technology Laboratories.

Built test equipment for measuring HEMTs.

ATM, Superconducting film division.
Design and characterization of superconducting films.

Royal Thai Air Force

Design of high power amplifier transmitters.

NYNEX

Cellular Tower Investigation

Other Activities

Member IEEE Antennas and Propagation Administration Committee
Former Editor - IEEE Antennas and Propagation Magazine
Associate Editor - IEEE Transactions on Education
Chairperson - Ithaca Chapter, IEEE Microwave Theory and Tech.
Coordinator - Short Courses IEEE Antennas and Propagation Symposium
Reviewer - NSF, Icarus, IEEE Cir. & Dev., Applied Optics,
IEEE MWGL, IEEE AP, IEEE EMC, Wiley
Editorial Board - Microwave Theory and Techniques Society
Member - The Electromagnetics Academy
Chairman and Co-Founder - Avoca Laboratories, Inc.
Interior Attack Firefighter - Cayuga Heights Company 1.
Traveling Lecturer - National Nanofabrication Facility.

Patent

R. C. Compton and R. A. York, *Mode-Locked Semiconductor Arrays*, patent application being prepared.

RECEIVED
MAY 27 1994

Publications May 1994

S. W. Wedge, R. C. Compton, and D. B. Rutledge, *Puff: Microwave Computer Aided Design*, Manual and software, first printing June 1987.

N. J. Kolias and R. C. Compton, *Antennas: Wire*, Chapter 4, CRC Handbook.

Papers

1. R. C. Compton, L. B. Whitbourn, and R. C. McPhedran, "Simple formula for the transmittance of strip gratings," *Int. J. of Infrared and Millimeter Waves*, **4**, pp. 901-912, 1983.
2. R. C. Compton, R. C. McPhedran, G. H. Derrick, and L. C. Botten, "Diffraction properties of a bandpass grid," *Infrared Physics*, **5**, pp. 239-245, 1983.
3. Chung-en Zah, R. C. Compton, and David B. Rutledge, "Efficiencies of elementary integrated-circuit feed antennas," *Electromagnetics*, **3**, pp. 239-254, 1983.
4. R. C. Compton and R. C. McPhedran, "Bandpass filters: theory and experiment," *Applied Optics*, **22**, pp. 3920-3921, 1983.
5. R. C. Compton, L. B. Whitbourn, and R. C. McPhedran, "Strip gratings at a dielectric boundary and applications of Babinet's principal," *Applied Optics*, **23**, pp. 3236-3242, 1984.
6. R. C. Compton, J. C. Macfarlane, L. B. Whitbourn, M. M. Blanco, and R. C. McPhedran, "Babinet's principle applied to ideal beamsplitters for millimeter waves," *Optica Acta*, **31**, pp. 515-524, 1984.
7. L. B. Whitbourn and R. C. Compton, "Equivalent-circuit formulas for metal grid reflectors at a dielectric boundary," *Applied Optics*, **24**, pp. 217-220, 1985.
8. R. C. Compton and D. B. Rutledge, "Approximation techniques for planar periodic structures," *IEEE Trans. Microwave Theory and Tech.*, **MTT-33**, pp. 1083-1088, 1985.
9. R. B. Roberts, F. Righini, and R. C. Compton, "Absolute scale of thermoelectricity," *Philosophical Magazine B*, **52**, pp. 1147-1163, 1985.
10. R. C. Compton, R. C. McPhedran, Z. Popović, G. M. Rebeiz, P. P. Tong and D. B. Rutledge, "Bow-tie antennas on a dielectric half space: theory and experiment," *IEEE Ant. and Propagation*, **35**, June 1987.
11. W. L. Williams, R. C. Compton, and D. B. Rutledge, "ELF: computer automation and error correction for a microwave network analyzer," *IEEE Trans. on Instrumentation and Measurement*, **37**, pp. 95-100 January 1988.
12. J. V. Bellantoni, G. C. Dalman, C. A. Lee, and R. C. Compton, "Millimeter-wave components for use in a variable state four-port vector network analyzer," *IEEE Trans. Microwave Theory and Tech.*, **MTT 37**, pp. 1880-1885, December 1988.
13. R. C. Compton and R. A. York, "A hands-on microwave laboratory course using microstrip circuits," *IEEE Trans. on Education, Special Issue on Electromagnetics*, **33**, pp. 161-163, February 1990.
14. J. V. Bellantoni, R. C. Compton, and H. M. Levy, "A 75 to 110 GHz waveguide to coplanar waveguide transition," *Applied Microwaves*, pp. 99-102, Summer 1991.
15. R. A. York and R. C. Compton, "Experimental evaluation of existing CAD models for microstrip dispersion," *IEEE Trans. Microwave Theory and Tech.*, **MTT 38**, pp. 327-328, March 1990.
16. R. A. York and R. C. Compton, "An automated method for dielectric constant measurements of microwave slabs," *Microwave Journal*, pp. 115-122, March 1990.
17. A. Roberts and R. C. Compton, "A vector measurement scheme for testing millimeter-wave quasi-optical components," *International Journal of Infrared and Millimeter-Waves*, pp. 165-174, February 1990.
18. R. C. Compton, "Making faster circuits using superconductors," *Cornell Engineering Quarterly*, Winter 1990.
19. R. A. York, R. D. Martinez, and R. C. Compton, "Active patch antenna element for array applications," *Electronics Letters* **26**, pp. 494-495, March 1990.
20. R. A. York, R. C. Compton, and B. J. Rubin "Experimental verification of the 2D rooftop modeling approach for modeling microstrip patch antennas," *IEEE Transactions on Antennas and Propagation*, pp. 690-693, May 1991.

21. R. C. Compton, "A multichannel microwave test station," *IEEE Transactions on Education*, **35**, pp. 211–213, August 1992.
22. R. A. York and R. C. Compton, "Quasi-optical power-combining using mutually synchronized oscillator arrays," *IEEE Transactions on Microwave Theory and Tech.*, **MTT 39**, pp. 1000–1009, June 1991.
23. J. V. Bellantoni and R. C. Compton, "Millimeter-wave applications of a vector network analyzer in coplanar probe tips," Invited Paper, *Microwave Journal*, pp. 113–121, March 1991.
24. R. A. York and R. C. Compton, "Mode-locked oscillator arrays," *The IEEE Microwave and Guided Wave Letters*, pp. 215–218, August 1991.
25. R. D. Martinez and R. C. Compton, "A general approach for the s-parameter design of oscillators with 1 and 2-port active devices," *IEEE Transactions on Microwave Theory and Tech.*, **MTT 40**, pp. 569–574, March 1992.
26. R. A. York and R. C. Compton, "Dual-device active patch antenna with improved radiation characteristics," *Electronics Letters* **28**, pp. 1019–1021, May 1992.
27. R. A. York and R. C. Compton, "Experimental observation and simulation of mode-locking phenomena in coupled-oscillator arrays," *Journal of Applied Physics*, pp. 2959–2964, March 1992.
28. R. A. York and R. C. Compton, "Measurement and modelling of radiative coupling in oscillator arrays," *IEEE Transactions on Microwave Theory and Tech.*, **MTT 41**, pp. 438–444, March 1993.
29. K. Y. Hur and R. C. Compton, "Fabrication of overpass microstructures in GaAs using isotropic reactive ion etching," *The Journal of Vacuum Science and Technology B* **10 (6)**, 2486–2487, Nov/Dec 92.
30. K. Y. Hur and R. C. Compton, "Airbridged-gate MESFETs fabricated by isotropic reactive ion etching," *IEEE Transactions on Electron Devices* **40**, pp. 1736–1739, October 1993.
31. Mark M. Gitin, Frank W. Wise, G. Arjavalingam, Y. Pastol and Richard C. Compton, "Broad-band characterization of millimeter-wave log-periodic antennas by photoconductive sampling," accepted for publication in *IEEE Ant. and Propagation*, Jan 1993.
32. A. C. Davidson, F. W. Wise, and R. C. Compton, "A 60 GHz IMPATT Oscillator Array with Pulsed Operation," *IEEE Transactions on Microwave Theory and Tech.* **MTT 41**, pp. 1845–1850, October 1993.
33. Mark J. Vaughan and Richard C. Compton, "A resonant-tee CPW oscillator and the application of the design to a monolithic array of MESFETs," *Electronics Letters* **29**, pp. 1477–1479, Aug 1993.
34. K. Y. Hur and R. C. Compton, "Mesa isolated GaAs Schottky barrier photodiodes," *Electronics Letters*, pp. 2033–2034, October 1992.
35. Scott E. McCormack and Richard C. Compton, "Unconventional engineering teaching tools," *Wiley Journal on Engineering Education* **1(2)**, pp. 123–128, 1993.
36. R. A. York and R. C. Compton, "Dual-device active patch antenna with improved radiation characteristics," *Electronics Letters* **28**, pp. 1019–1021, May 1992.
37. K. Y. Hur and R. C. Compton, "Multilevel ramp transitions in GaAs circuits," *Applied Physics Letters*, pp. 3132–3134, June 1993.
38. Mark J. Vaughan, Katerina Y. Hur, and Richard C. Compton, "Improvement of microstrip patch antenna radiation patterns," accepted for publication in *IEEE Ant. and Propagation*, Aug 1993.
39. K. Y. Hur, W. J. Schaff, L. F. Eastman, and R. C. Compton, "A MODFET Process for Micrometer Scale Strained Layer Islands," accepted for publication in *Solid State Electronics*, August 1993.
40. N. J. Koliass and R. C. Compton, "A microstrip-based unit cell for quasi-optical amplifier arrays," *IEEE Microwave and Guided Wave Letters*, pp. 330–332, May 1993.
41. R. D. Martinez, Daniel E. Oates, and R. C. Compton, "Correlation of 1/f Baseband Current and Phase Noise," accepted for publication in *IEEE Transactions on Microwave Theory and Tech.*, Aug. 1993.
42. R. D. Martinez and R. C. Compton, "High efficiency FET/microstrip-patch oscillators," accepted for publication in *IEEE Antennas and Propagation Magazine*, September 1993.
43. A. C. Davidson, R. C. Compton, F. W. Wise, D. Mars, and J. Miller, "Femtosecond relaxation of minority electrons in heavily carbon-doped GaAs," submitted for publication in *Applied Physics Letters*.

Conference Papers

1. R. C. Compton and R. B. Roberts, "Temperature profile in a wire," Sixth Annual A.I.P. Solid State Physics Meeting, Wagga Wagga Australia, February 1982.
2. R. C. Compton, J. C. Macfarlane, R. C. McPhedran, and L. B. Whitbourn, "Thin self-complementary metal screens as lossless, broadband, polarization-independent beamsplitters for millimetre and submillimetre wavelengths," Foundation Meeting Australian Optical Society, Sydney Australia, May 1983.
3. J. C. Macfarlane, R. C. Compton, L. B. Whitbourn, and M. M. Blanco, "Investigation of chequer-board screens as beamsplitters at MSM wavelengths," Australian Millimeter wave conference, Canberra Australia, September 1983.
4. L. B. Whitbourn, J. C. Macfarlane, R. C. Compton and M. M. Blanco, "Development and testing of output couplers for millimetre and submillimeter lasers," Australian Millimeter wave conference, Canberra Australia, September 1983.
5. R. C. Compton, J. C. Macfarlane, L. B. Whitbourn and M. M. Blanco, "Design, manufacture and transmission measurements of strip gratings for use as sub-millimetre laser couplers," 8th International Conference on Infrared and Millimeter Waves, Miami Florida, December 1983.
6. C. Zah, R. C. Compton and D. B. Rutledge, "Efficiencies of elementary Integrated-circuit feed antennas," 9th International Conference on Infrared and Millimeter Waves, Osaka Japan, 1984.
7. R. C. Compton, C. E. Zah, D. B. Rutledge and N. C. Luhmann Jr., "Near-millimeter wave imaging arrays," 1985 North American Radio Science Meeting, Vancouver Canada, June 1985.
8. R. C. Compton and D. B. Rutledge, "Circuit modeling of planar meshes with discrete loads," SPIE 29th Annual International Technical Symposium on Optical and Electro-Optical Engineering, San Diego California, August 1985.
9. L. B. Whitbourn, J. C. Macfarlane, M. M. Blanco, R. C. Compton and R. C. McPhedran, "Transmission-line models for strip gratings and meshes on dielectric substrates," 2nd Symposium on Millimetre and Sub-millimetre wave research in Australia, Sydney Australia, August 1985.
10. C. E. Zah, R. C. Compton and D. B. Rutledge, "Progress in millimeter wave imaging arrays," 2nd Symposium on Millimetre and Sub-millimetre wave research in Australia, Sydney Australia, August 1985.
11. R. C. Compton G. M. Rebeiz and D. B. Rutledge, "Design of a two dimensional quasi-optical antenna array," Third Conference of the Australian Optical Society, Sydney Australia, August 1985.
12. L. B. Whitbourn, J. C. Macfarlane, M. M. Blanco, R. C. Compton and R. C. McPhedran, J. A. How and D. Veron, "Recent progress in equivalent-circuit transmission-line modelling of periodic metal grid reflectors," Third Conference of the Australian Optical Society, Sydney Australia, August 1985.
13. R. C. Compton, G. M. Rebeiz and D. B. Rutledge, "Developments in two dimensional arrays," Tenth International Conference on Infrared and Millimeter Waves, Orlando Florida, December 1985.
14. R. Compton, W. Williams and D. Rutledge, "Computer-aided design of microwave integrated circuits," Proceedings of the 1986 Advanced Educational Projects Conference, San Diego California, April 1986.
15. R. C. Compton and D. B. Rutledge, "Optical techniques at millimeter wavelengths," Optical Society of America Annual Meeting, Seattle Washington, October 1986.
16. R. C. McPhedran, R. C. Compton, Z. Popović, G. M. Rebeiz, P. P. Tong and D. B. Rutledge, "Bow-tie antennas on a dielectric half space: theory and experiment," Eleventh International Conference on Infrared and Millimeter Waves, Pisa Italy, October 1986.
17. R. Compton, W. Williams, S. Pietrusiak, Z. Popović, K. Potter and D. Rutledge, "A class for the computer-aided-design and measurement of microwave integrated circuits," Conference on the producibility of Millimeter Wave/Microwave Integrated Circuits, Huntsville Alabama, November 1986.
18. R. Compton, G. Rebeiz and D. Rutledge, "Millimeter-wave integrated-circuit antennas," SPIE conference, Orlando Florida, May 1987.
19. D. Rutledge, R. Compton, W. Williams, Z. Popović, and K. Potter, "A class for computer-aided design and measurement of microwave integrated circuits," International Antennas and Propagation Symposium, Blacksburg Virginia, June 1987.
20. R. Compton, W. Williams and D. Rutledge, "Puff, an interactive microwave computer-aided design program for personal computers," MTT-S International Microwave Symposium, Las Vegas Nevada, June 1987.

21. J. V. Bellantoni, G. C. Dalman, and R. C. Compton, "A millimeter-wave vector network analyzer," IEEE MTT-S International Microwave Symposium, New York, pp. 747-750, June 1988.
22. R. A. York, R. C. Compton, M. Kim, S. Wedge, and D. B. Rutledge, "An alternative approach to designing microwave circuits using a personal computer," IEEE Antennas and Propagation International Symposium, Syracuse New York, May 1988.
23. J. V. Bellantoni, R. C. Compton, and H. M. Levy, "A new W-band coplanar waveguide test fixture," IEEE MTT-S International Microwave Symposium Digest, Long Beach CA, pp. 1203-1204, June 1989.
24. A. Roberts and R. C. Compton, "Bandpass filters for use in millimeter-wave quasi-optical systems," IEEE Antennas and Propagation International Symposium Digest, San Jose CA, pp. 1726-1729, June 1989.
25. A. Roberts, L. M. C. Sukanto, and R. C. Compton, "Millimeter-wave applications for planar arrays of ring resonators," Progress in Electromagnetics Research Symposium Proceedings, Cambridge MA, pp. 218-219, July 1989.
26. J. V. Bellantoni and R. C. Compton, "A new coplanar waveguide vector network analyzer for on wafer measurements," Advanced Concepts in High Speed Semiconductor Devices and Circuits, Ithaca NY, pp. 201-207, July 1989.
27. R. C. Compton and D. B. Rutledge, "Perspectives in microwave circuit analysis," 32nd Midwest Circuits and Systems Symposium, Urbana-Champaign Illinois, August 1989.
28. R. A. York and R. C. Compton, "New methods in the practice of microwave engineering education," IEEE Frontiers in Education, Binghamton New York, pp. 164-166, October 1989.
29. R. A. York, A. Roberts, and R. C. Compton, "Picasso - A windows tool for building high frequency circuits," 1989 IBM Academic Computing Conference, June 1989.
30. D. B. Rutledge, Z. B. Popovic, R. M. Weikle, M. Kim, K. A. Potter, R. A. York, and R. C. Compton, "Quasi-optical power-combining arrays," Invited Paper, MTT-S International Microwave Symposium, pp. 1201-1204, May 1990.
31. J. V. Bellantoni and R. C. Compton, "A vector network analyzer integrated into a coplanar-waveguide probe," IEEE MTT-S International Microwave Symposium Digest, pp. 1025-1028, May 1990.
32. R. A. York and R. C. Compton, "A 4x4 array using Gunn diodes," IEEE Antennas and Propagation International Symposium, May 1990.
33. A. Roberts and R. C. Compton, "A vector measurement scheme for testing quasi-optical components," Fourth Symposium on Millimetre and Submillimetre Wave Research in Australia, February 1990.
34. R. C. Compton, S. W. Wedge, and D. B. Rutledge, "Microwave CAD using Puff," Computer Applications in Electromagnetic Educational Workshop (Invited).
35. K. Y. Hur, M. M. Gitin, R. C. Compton, and D. G. Swanson "Fabrication of a lumped element microwave bandpass filter using integrated circuit processing techniques," 1990 Microwave Hybrid Circuits Conference.
36. B. J. Rubin, R. A. York, and R. C. Compton, "Accurate full-wave approach for modeling patch antennas," 15TH International Conference on Infrared and Millimeter Waves.
37. C. Rehwinkle, M. M. Gitin, R. D. Martinez, R. A. York, K. R. Haselton, F. A. Wise, and R. C. Compton "Optical control of MESFET and HEMT millimeter/microwave circuits," presented at the 15TH International Conference on Infrared and Millimeter Waves, Orlando Dec 1990.
38. R. A. York and R. C. Compton, "TeraHertz power-combining with coupled oscillator arrays," Second International Symposium on space terahertz technology, February 1991.
39. R. C. Compton and R. A. York, "Integrated antenna/oscillator structures," Progress in Electromagnetics Research Symposium, Cambridge MA, July 1991.
40. R. A. York and R. C. Compton, "Design of weakly-coupled oscillator arrays," Progress in Electromagnetics Research Symposium, Cambridge MA, July 1991.
41. N. J. Kolias, R. A. York, R. C. Compton and P. J. Kirlin, "Characterization of conduction losses in high-Tc films," AP/URSI Conference, London Ontario, June 91.
42. K. Y. Hur and R. C. Compton, "Millimeter-wave GaAs Schottky barrier photodiodes," 16TH International Conference on Infrared and Millimeter Waves, Switzerland August 1991.
43. R. A. York and R. C. Compton, "Coupled-oscillator arrays for millimeter-wave power-combining and mode-locking," MTT-S International Microwave Symposium, 429-432, May 1992.

44. R. A. York and R. C. Compton, "Automatic beam scanning in mode-locked oscillator arrays," *IEEE Antennas and Propagation Conference*, June 1992.
45. Scott E. McCormack and Richard C. Compton, "EE learning station," *National Pipeline Conference*, Houston, Sept, 1992.
46. Katerina Y. Hur, Mark M. Gitin, Frank W. Wise and Richard C. Compton, "A novel interconnection and isolation scheme for multilayer OEIC device integration," *IEEE National Radio Science Meeting Symposium Digest*, Boulder, D-2 p. 55 Jan 1993.
47. Katerina Y. Hur, Mark J. Vaughan and Richard C. Compton, "A uniformity/yield study for monolithic GaAs arrays for quasi-optical applications," *Progress in Electromagnetics Research Symposium*, Los Angeles CA, July 1993.
48. Mark J. Vaughan and Richard C. Compton, "An investigation of pattern enhancement techniques for microstrip patch and slot antennas," *Progress in Electromagnetics Research Symposium*, Los Angeles CA, July 1993.
49. W. Wright and R. C. Compton, "A 25-40 GHz frequency tripler for array applications," *National Radio Science Meeting*, Michigan, July 1993.
50. W. Wright, A. Davidson, K. Y. Hur, and R. C. Compton, "Subharmonic injection locking of a FET oscillator for use in an oscillator array," *1993 Workshop on Millimeter-Wave Power Generation and Beam Control*, Sept 1993.
51. M. J. Vaughan, N. Koliass, R. D. Martinez, and R. C. Compton, "Oscillator and amplifier designs for quasi-optical arrays," *1993 Workshop on Millimeter-Wave Power Generation and Beam Control*, Sept 1993.
52. W. J. Schaff, K. Y. Hur, L. F. Eastman, R. C. Compton, and P. Mandeville, "Strained layer device epitaxy on patterned substrates," *IEEE/Cornell Conference on Advanced Concepts in High Speed Semiconductor Devices and Circuits*, August 1993
53. René D. Martinez and Richard C. Compton, "Electronic beamsteering of active arrays with phase-locked loops," *1994 National Radio Science Meeting*, Boulder CO, Jan. 1994.
54. R. D. Martinez, M. J. Vaughan, W. Wright, and R. C. Compton, "Output power analysis for the design of transistor based oscillators" *1994 National Radio Science Meeting*, Boulder CO, Jan. 1994.
55. R. D. Martinez and R. C. Compton, "A quasi-optical oscillator/modulator for wireless transmission," *1994 MTT Symposium*, May 1994.
56. R. D. Martinez, M. J. Vaughan, N. J. Koliass, and R. C. Compton, "A speculative look at requirements for future millimeter-wave systems," *1994 MTT Symposium*, May 1994.
57. M. J. Vaughan, R. C. Compton, and S. Weinreb "Monolithic 60 GHz PHEMT Oscillator," submitted for presentation *AP/URSI Conference*, Seattle WA, June 1994.
58. A. C. Davidson, F. W. Wise, and R. C. Compton, "Picosecond Electrical Sampling with an Integrated Inductive Loop and MSM Photodetector," submitted to *GaAs IC Symposium*, Sept 1994.